



UNITED STATES PATENT AND TRADEMARK OFFICE

RF

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/061,067	01/29/2002	Serge Dubovitsky	NP0-20740-1-CU	5407
7590	12/22/2003			
NASA Management Office - JPL M/S 180-081 4800 Oak Grove Drive Pasadena, CA 91109-8099			EXAMINER LYONS, MICHAEL A	
			ART UNIT 2877	PAPER NUMBER

DATE MAILED: 12/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/061,067	Applicant(s) DUBOVITSKY, SERGE	
	Examiner Michael A. Lyons	Art Unit 2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 14-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 14-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 September 2003 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

The drawings were received on September 16, 2003. These drawings are accepted.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 7-12 and 14 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Otsuka (5,493,395).

Regarding claim 7, Otsuka (Fig. 3) discloses a laser source 1, a pair of acousto-optic modulators 14a and 14b, a target path comprising the interferometer based around beam splitter 8 culminating at photodetector 13b, a reference path comprising a light beam split by beam splitter 7 to photodetector 13a, and a data processing computer for comparing the results of the signals generated by the photodetectors and applied to phase meters 17a and 17b.

Regarding claims 11 and 14, since the device of Otsuka discloses all the claimed elements of the present invention, the device also discloses the claimed method of using the device, as the claimed method, applied to a device with all the claimed elements of the invention, will generate the desired results of the claimed device.

As for claim 8, the modulators apply a frequency shift to the initial light beams to generate a phase modulation, and a phase output is taken out, or demodulated, at the phase meters (see Col. 4, lines 44-57).

As for claims 9 and 12, the modulators act as a frequency shifter.

As for claim 10, the data processing computer can act as an intensity comparator to perform any necessary calculations on the result signals.

Double Patenting

Claims 1-6 and 15-18 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 11 of U.S. Patent No. 6,646,723. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1 and 15 in the present application disclose the same basic structure of the apparatus as disclosed in claim 11 of the patent, with a few minor, non-critical differences. In both claim 1 and claim 15, there is only a single phase modulator 110, yet a heterodyne signal is still produced by a pair of frequency shifters shifting at a different respective frequency. The limitation of the target reflector and reference reflector being separated in distance by L is not explicitly claimed in claim 11 of the patent, but is inherent to the apparatus. Finally, with specific regard to claim 15 of the present application, there are no quarter-wave plates in claim 11 of the patent; however, the quarter-wave plates, as claimed, only serve to rotate the polarization of the reference and measurement light by 90 degrees. This rotation is not critical to the operation of the device as claimed, as heterodyne signal will be detected whether the polarization is rotated or not.

Response to Arguments

Applicant's arguments filed September 16, 2003 have been fully considered but they are not persuasive. The arguments presented by the applicant focus on the amended specification and drawing of the present application and not the invention as specifically disclosed within the

Art Unit: 2877

claims. Since the Otsuka patent discloses an apparatus with the same elements as the present application, as disclosed above, the rejection is still valid and therefore stands.

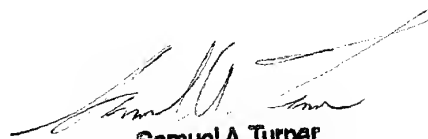
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Lyons whose telephone number is 703-305-1933.

The examiner can normally be reached on Monday thru Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G Font can be reached on 703-308-4877. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0935.

MAL
December 9, 2003



Samuel A. Turner
Primary Examiner